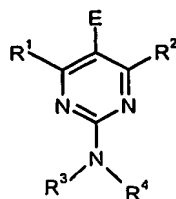


CLAIMS

1. A process for the preparation of a compound of Formula (1):



Formula (1)

which comprises

a) reacting a compound of formula $R^1\text{-CO-CH}_2\text{-E}$ with a compound of formula $R^2\text{-CHX}^1\text{X}^2$ in the presence of a compound of formula $R^3R^4\text{N-C(=NH)NH}_2$ and a catalyst, thereby to form a dihydropyrimidine; and

b) oxidising the dihydropyrimidine produced in step a) to form the compound of Formula (1)

wherein

R^1 is H or an alkyl group;

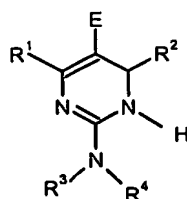
R^2 is H or an alkyl or aryl group;

R^3 and R^4 are each independently H, alkyl or aryl, or R^3 and R^4 are linked to form, together with the nitrogen to which they are attached to form a 5 to 7 membered heterocyclic ring;

E is H, an unsubstituted alkyl group, an aryl group or an electron withdrawing group; and

X^1 and X^2 are each independently leaving groups, or X^1 and X^2 together represent $=\text{O}$.

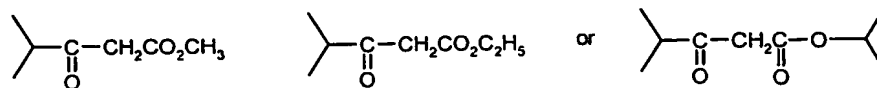
2. A process according to claim 1, wherein the dihydropyrimidine is represented by the Formula (2a), and tautomers thereof:



Formula (2a)

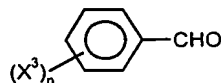
wherein R^1 , R^2 , R^3 , R^4 and E are as defined in claim 1.

3. A process according to claim 1 or claim 2, wherein the compound of formula $R^1\text{-CO-CH}_2\text{-E}$ is a compound of formulae:



4. A process according to any preceding claim, wherein the compound of formula $R^2\text{-CHX}^1\text{X}^2$ is a compound of formula:

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wherein X^3 represents halo, and n is 0 or 1-5, and preferably 4-fluorobenzaldehyde.

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5. A process according to any preceding claim, wherein the compound of formula $R^3R^4\text{N-C(=NH)NH}_2$ is guanidine or methylguanidine.

6. A process according to claim 5, wherein the compound of formula $R^3R^4\text{N-C(=NH)NH}_2$ is employed as a hydrochloride or sulfate salt.

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7. A process according to any preceding claim, wherein the catalyst is a base.

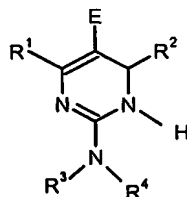
8. A process according to claim 7, wherein the base is an alkali or alkaline earth metal carbonate or hydrogencarbonate.

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9. A process according to any preceding claim, wherein the oxidising agent is manganese dioxide.

10. A compound of Formula (2a), and tautomers thereof:

25



Formula (2a)

wherein

R^1 is H or an alkyl group;

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R^2 is H or an alkyl or aryl group;

R^3 and R^4 are each independently H, alkyl or aryl, provided that R^3 and R^4 are not both unsubstituted alkyl; and

E is an unsubstituted alkyl group, an aryl group or an electron withdrawing group, further provided that R^1 is not $-CH_3$ when R^2 is unsubstituted phenyl or o-nitrophenyl.

11. A compound according to claim 10, wherein R^2 represents a phenyl group substituted by one or more halogens.

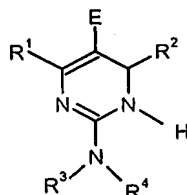
12. A compound according to claim 10 or 11, wherein at least one of R^3 and R^4 is H.

13. A compound according to any one of claims 10 to 12, wherein R^1 represents isopropyl and R^2 represents 4-fluorophenyl.

14. A compound according to any one of claims 10 to 13, wherein R^3 is H or methyl and R^4 is H.

15. A compound according to anyone of claims 10 to 14, wherein E represents a group of formula $-CO_2(C_{1-4}alkyl)$.

16. A process for the preparation of a compound of Formula (2a) and tautomers thereof:



Formula (2a)

which comprises

a) reacting a compound of formula $R^1-CO-CH_2-E$ with a compound of formula $R^2-CHX^1X^2$ in the presence of a compound of formula $R^3R^4N-C(=NH)NH_2$ and a catalyst, thereby to form the compound of Formula (2a)

wherein

R^1 is an H or an alkyl group;

R^2 is an H or an alkyl or aryl group;

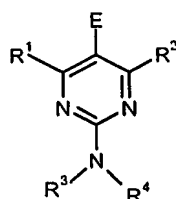
R^3 and R^4 are each independently H, alkyl or aryl, or R^3 and R^4 are linked to form, together with the nitrogen to which they are attached to form a 5 to 7 membered heterocyclic ring;

E is H, an unsubstituted alkyl group, an aryl group or an electron withdrawing group; and X^1 and X^2 are each independently leaving groups, or X^1 and X^2 together represent $=O$.

17. A process according to claim 16, wherein R^1 represents isopropyl, R^2 represents 4-fluorophenyl, and R^3 and R^4 each independently represents H or methyl.

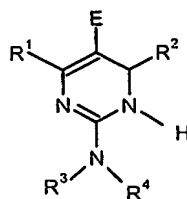
18. A process according to claim 17, wherein R^3 is methyl and R^4 is H.

19. A process for the preparation of a compound of Formula (1):



Formula (1)

which comprises oxidising a compound of Formula (2a):



Formula (2a)

wherein

R^1 is H or an alkyl group;

R^2 is an H, an alkyl or aryl group;

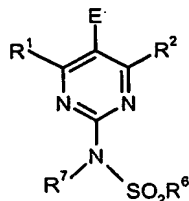
R^3 and R^4 are each independently H, alkyl or aryl, or R^3 and R^4 are linked to form, together with the nitrogen to which they are attached to form a 5 to 7 membered heterocyclic ring; and

E is H, an unsubstituted alkyl group, an aryl group or an electron withdrawing group.

20. A process according to claim 19, wherein R^1 represents isopropyl, R^2 represents 4-fluorophenyl, and R^3 and R^4 each independently represents H or methyl.

21. A process according to claim 19 or 20, wherein the oxidation employs manganese dioxide.

22. A process for the preparation of a compound of Formula (3):



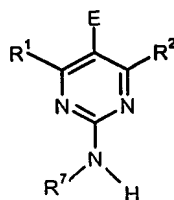
Formula (3)

5 which comprises

a) reacting a compound of formula $R^1\text{-CO-CH}_2\text{-E}$ with a compound of formula $R^2\text{-CHX}^1\text{X}^2$ in the presence of a compound of formula $R^7\text{HN-C(=NH)NH}_2$ and a catalyst, thereby to form a dihydropyrimidine;

b) oxidising the dihydropyrimidine produced in step a) to form a compound of Formula (4)

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Formula (4)

and

c) reacting the compound of Formula (4) with a compound of formula $R^6\text{SO}_2\text{-X}^4$ to give a compound of Formula (3);

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wherein

R^1 , R^2 ; E, X^1 and X^2 are as defined in claim 1;

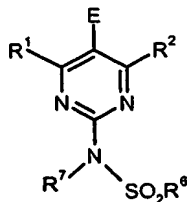
R^6 represents alkyl or aryl, preferably methyl;

R^7 is H, alkyl or aryl; and

20

X^4 represents a leaving group, preferably Cl or Br.

23. A process for the preparation of a compound of Formula (3):



Formula (3)

25

which comprises

a) reacting a compound of formula $R^1\text{-CO-CH}_2\text{-E}$ with a compound of formula $R^2\text{-CHX}^1\text{X}^2$ in the presence of a compound of formula $R^7\text{HN-C(=NH)NH}_2$ and a catalyst, thereby to form a dihydropyrimidine comprising an exocyclic group formula -NHR^7 ;

5 b) reacting the compound of Formula (4) with a compound of formula $R^6\text{SO}_2\text{-X}^4$ to form a dihydropyrimidine comprising an exocyclic group formula $\text{-N(R}^7\text{)SO}_2\text{R}^6$;

c) oxidising the dihydropyrimidine produced in step b) to form a compound of Formula (3);
wherein

R^1 , R^2 ; E, X^1 and X^2 are as defined in claim 1;

10 R^6 represents alkyl or aryl, preferably methyl;

R^7 is H, alkyl or aryl; and

X^4 represents a leaving group, preferably Cl or Br.

24. A process according to claim 22 or 23, wherein R^1 represents isopropyl, R^2 represents 4-fluorophenyl, X^1 and X^2 together represent $=\text{O}$, R^6 represents methyl, E represents a group of formula $\text{-CO}_2(\text{C}_{1-4}\text{alkyl})$, and R^7 is H or methyl.

25. A compound of formula $(\text{CH}_3)_2\text{CH-CO-CH}_2\text{-CO}_2\text{-C}_3\text{H}_7$

20 26. A compound according to claim 25, of formula:

